Recent Onset Atrial Fibrillation: Baseline Data from Thai Subset of RECORD AF Study

Charn Sriratanasathavorn MD*,
Satchana Pumprueg MD**, Warangkna Boonyapisit MD**

** Her Majesty Cardiac Center, Siriraj Hospital, Mahidol University, Bangkok, Thailand*
*** Division of Cardiology, Department of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand*

Background: *The RECORD AF study is the first worldwide, prospective, observational 1-year longitudinal survey of real-life management of patients with recently diagnosed atrial fibrillation (AF). The authors present here the baseline data of Thai subset of the study.*
Material and Method: *The study enrolled consecutive patients of age ≥18 years, presenting with and treated for AF (≤1 year from diagnosis), visiting office- or hospital-based cardiologists. The main primary objectives were to assess therapeutic success and clinical outcomes in rhythm- and rate-control strategies.*
Results: *Of 209 patients recruited between July and December 2007, 200 were eligible for evaluation (mean age: 62.8 years, SD 12.4; 51% males). Hypertension (49%) and dyslipidemia (36%) were the most common underlying cardiovascular diseases (CVDs). Thirty-six point nine percent of patients were at high risk of stroke ($CHADS_2$ score ≥2). In the previous year, 93 (52%) patients were diagnosed with paroxysmal AF and 86 (48%) patients with persistent AF. Rate-control was the main treatment strategy used in 151 (75.5%) of the patients, and was more frequently used in persistent AF (94.2%) than paroxysmal AF (61.3%). The most frequent medication used for rhythm-control strategy was amiodarone (83.7%) and, for rate-control strategy, it was beta-blockers (57%). For antithrombotic medication, antiplatelet agents were used in 92 (46%) patients and oral anticoagulation in 86 (43%) patients.*
Conclusion: *For Thai patients with AF, hypertension and dyslipidemia were the most common underlying CVDs, and rate control was the preferred treatment strategy. The prospective1-year data will provide insights on current AF treatment strategies.*

Keywords: *Atrial fibrillation, Guidelines, Rhythm control, Rate control, Thailand*

J Med Assoc Thai 2014; 97 (Suppl. 3): S115-S123
Full text. e-Journal: *http://www.jmatonline.com*

Atrial fibrillation (AF) is an important cause of morbidity and mortality due to increased risk of stroke, thromboembolism, HF, and cognitive dysfunction, and also leads to a significant impairment of quality of life (QoL)[1-4].

The prevalence of AF is 1%-2% in the general population[5,6]. The majority of surveys were conducted in Caucasians. There are very few studies in non-Caucasian populations. Based on the limited data available from China, Korea, and Japan, the prevalence of AF in Asian populations is lower than that in Westerner[7-12]. An earlier study in Thailand demonstrated that the prevalence rate of AF in Thai community was 3.6 per thousand[13].

Correspondence to:
Pumprueg S, Division of Cardiology, Department of Medicine, Siriraj Hospital, Mahidol University, Bangkok 10700 Thailand.
Phone: 0-2419-6104-5, Fax: 0-2412-7412
E-mail: drsatchana@gmail.com

The REgistry on Cardiac rhythm disORDers assessing the control of Atrial Fibrillation (RECORD AF) is the first, observational, longitudinal study aimed to assess the control of AF over one year in recently diagnosed patients from 21 countries worldwide. The current paper presents baseline data of Thai patients enrolled in RECORD AF registry.

Material and Method

RECORD AF is an international, observational, prospective, 1-year longitudinal cohort study of management of patients with recently diagnosed AF. The global study was conducted in 21 countries worldwide, and the baseline data of the global study has been published[14]. Physicians were selected randomly from a comprehensive global list of office- or hospital-based cardiologists. This random selection was made in accordance with ratio for hospital-based or office-based cardiologists in Thailand to reflect accurately the practices in Thailand. The present study

was conducted in accordance with the principles laid down by the Declaration of Helsinki[15], and guidelines for Good Epidemiological Practices[16]. The present study was a non-interventional registry to collect information on the epidemiology and management of AF.

Patient selection

Patients meeting the following inclusion criteria were considered for enrolment in the study: age ≥18 years; patients with AF (diagnosed by standard electrocardiogram (ECG) or by ECG Holter monitoring) or history of AF (diagnosed ≤1 year by ECG or by ECG Holter monitoring, irrespective of whether AF was treated or not and irrespective of the rhythm at inclusion); patients eligible for pharmacological treatment of AF (by rhythm- or rate-control agents); and patients who signed written informed consent. Patients meeting the following criteria were excluded from the study: AF due to a transient cause (thyrotoxicosis, alcohol intoxication, acute phase of myocardial infarction (MI), pericarditis, myocarditis, electrocution, pulmonary embolism or other pulmonary disease, hydroelectrolytic disorder, metabolic disorder, etc.); post cardiac surgery AF (<3 months); patients with life expectancy <1 year due to a severe disease; mentally disabled patients unable to understand or sign the written informed consent; patients unable to comply with follow-up visits; patients with pacemaker or implantable cardioverter-defibrillator (ICD); patients scheduled for pulmonary vein ablation, atrioventricular node/His bundle ablation, or pacemaker implantation; patients included in a clinical trial in the field of AF in the previous 3 months; and pregnant or breastfeeding women.

Study endpoints

The main primary objectives of the RECORD AF study were to assess the rate of therapeutic success and to compare the clinical outcomes in rhythm-control vs. rate-control treatment strategies at 12±3 months follow-up. The main secondary objectives at 12±3 months follow-up were: 1) assessment of the treatment effectiveness in patients with AF by evaluating the proportion of patients in sinus rhythm (recorded during the visit), 2) assessment of the treatment effectiveness in patients with AF by evaluating the proportion of patients at rate control target (≤80 bpm at rest), and 3) success rate (sinus rhythm or heart rate ≤80 bpm at rest) according to the drug class (rhythm control or rate control).

Study duration

The recruitment phase was 6 months, followed by 3 visits: baseline visit and 2 follow-up visits at 6±2 months and 12±3 months. The data collected at each study visit have been discussed elsewhere[14]. The present paper presents data of the Thai patients evaluated in RECORD AF study according to the therapeutic strategy selected at the baseline visit.

Statistical analysis

The descriptive information was summarized as mean ± SD for quantitative data. The categorical data was summarized as the number and percentage of the population. Comparisons between strategies were made using the Chi-square test or Fisher's exact test for qualitative variables with a 0.05 significant level and analysis of variance or the Wilcoxon test for quantitative variables. The detailed statistical analyses of the global RECORD AF study have been described earlier[14].

Results

Baseline demographic and anthropometric data and vital statistics

Between July and December 2007, a total of 209 consecutive patients were included in the study from 20 study centers across Thailand. Of these, 200 (95.7%) patients were eligible for evaluation. The reasons for non-eligibility were no history of AF and AF not discovered at the inclusion visit or AF diagnosed since >1 year (2.9%), non-eligibility for pharmacological treatment of AF (1.0%), and patients with AF due to a transient cause (0.5%). The mean age of the evaluated patients was 62.8 years (SD 12.4), 51% of patients were males and almost all (99.9%) were Asian. There were slightly more male patients who received rhythm control strategy (63% vs. 47%, p = 0.048). The baseline demographic, anthropometric and clinical data are presented in Table 1.

Cardiovascular risk factors and history of cardiovascular and non-cardiac co-morbidities

Most patients never smoked (60.5%), 49% had a history of arterial hypertension, and 36% had a history of dyslipidemia. A family history of premature cardiovascular disease (p = 0.030), heart failure (HF) (p = 0.048), or valvular heart disease (p = 0.006) was significantly more frequent among those who received rate-control strategy. The patients who received rhythm-control strategy had higher history of arterial hypertension (p = 0.009), dyslipidemia (p = 0.004), or

Table 1. Baseline data on demographics, physical measurements, and vital statistics

Parameters	Rhythm-control Strategy (n = 49)	Rate-control Strategy (n = 151)	Total (n = 200)	p-value
Age (years ± SD)	63.9±11.4	62.4±12.7	62.8±12.4	0.452*
Male	31 (63.3)	71 (47.0)	102 (51.0)	0.048+
Asian ethnicity	48 (98.0)	151 (100)	199 (99.5)	0.245++
Body mass index (kg/m^2)	25.4±4.2	24.3±4.9 (n = 149)	24.6±4.7 (n = 198)	0.051+++
Seated systolic blood pressure (mmHg)	124.0±15.6	125.2±19.0	124.9±18.2	-
Seated diastolic blood pressure (mmHg)	76.7±8.0	76.6±10.3	76.6±9.8	-
Resting heart rate (beats/min)	75.0±15.9	77.4±16.2	76.8±16.1	0.241+++

Categorical variables are presented as actual number and percentage. Continuous variables are presented as mean ± SD
* Student t test, + Chi-square test, ++ Fisher's exact test, +++ Wilcoxon test

arrhythmia other than AF (p = 0.046). Among patients having HF, 62.9% of patients were in the New York Heart Association (NYHA) functional class I and II. Regarding to thromboembolic risk, 36.9% of patients had $CHADS_2$ (congestive heart failure, hypertension, age ≥75 years, diabetes mellitus, prior stroke/systemic embolus/TIA) score[28] of ≥2. The cardiovascular (CV) risk factors and history of CV and non-cardiac co-morbiditiesare presented inTable 2.

Atrial fibrillation characteristics

At inclusion, 89.5% of patients had AF diagnosed in the previous year, 24% of patients had a history of lone AF, and 68.5% of patients were symptomatic. Baseline ECG revealed that only 29.5% of patients were in sinus rhythm. A majority of patients (84.2%) had normal left ventricular ejection fraction (LVEF >50%). Others with AF characteristics at inclusion are presented in Table 3.

Characteristics of patients diagnosed AF in the previous year (before baseline) is presented in Table 4. The mean reported symptomatic episodes of AF within the previous year were 9.4 (SD 23.1). Ninety-three (52%) patients were diagnosed with paroxysmal AF and 86 (48%) patients were diagnosed with persistent AF. Rate-control strategy is more preferred as 57 (61.3%) patients were diagnosed with paroxysmal AF and 81 (94.2%) patients diagnosed with persistent AF received rate-control strategy. More patients in the rhythm-control group underwent pharmacological cardioversion compared to the rate-control group. Catheter ablation or surgical therapy was not used in the present study.

Choice of treatment at baseline

Of 200 eligible patients, 151 (75.5%) patients received rate-control strategy and 49 (24.5%) patients received rhythm-control strategy at inclusion. A majority of both newly diagnosed and previously diagnosed patients received rate-control strategy (72.2% and 77.1%). Fifty-seven (61.3%) patients with paroxysmal AF and 81 (94.2%) patients with persistent AF received rate-control therapy (Fig. 1).

Pharmacologic treatments prescribed at baseline

Table 5 presents data on pharmacologic treatments of AF at baseline. More patients in the rhythm-control group received amiodarone compared to patients in the rate-control group (83.7% vs. 6.3%; p<0.001). Beta-blockers, except sotalol and cardiac glycosides, were prescribed more often in the rate-control group compared to the rhythm-control group (57% vs. 26.5% and 42.3% vs. 10.2%, respectively). Beta-blockers, except sotalol, were the most common agents prescribed among patients receiving rate-control strategy at baseline (57.0%), followed by cardiac glycosides (42.3%) and heart-rate lowering calcium-channel blockers (14.8%). Class IC anti-arrhythmic drugs were prescribed only to patients in the rhythm-control strategy group, while class IA anti-arrhythmic drugs were not prescribed at all.

Of those other cardiovascular treatments, antihypertensive drugs was the most prescribed (61.5%), followed by antiplatelet agents (46.0%), and vitamin K antagonist (43.0%). Patients in the rate-control strategy group were more likely to receive diuretics as compared to patients in the rhythm-control strategy group (59.1% vs. 30.0%; p<0.006). Lipid lowering drugs (p = 0.002) were significantly more prescribed among patients in rhythm-control group, while vitamin K antagonist (p = 0.044) was significantly more prescribed among patients in rate-control group.

Table 2. Baseline data on cardiovascular risk factors and history of cardiovascular and non-cardiac co-morbidities

Parameters	n	Rhythm-control Strategy	n	Rate-control Strategy	n	Total	p-value
Family history of premature cardiovascular disease[a]	41	1 (2.4)	135	20 (14.8)	176	21 (11.9)	0.030[++]
Smoking status[b]	49		151		200		0.137[++]
Never		34 (69.4)		87 (57.6)		121 (60.5)	
Current		3 (6.1)		17 (11.3)		20 (10.0)	
Former		9 (18.4)		44 (29.1)		53 (26.5)	
Unknown/not smoking now		3 (6.1)		3 (2.0)		6 (3.0)	
History of							
Coronary artery disease	46	5 (10.9)	147	9 (6.1)	193	14 (7.3)	0.328[++]
Myocardial infarction	49	4 (8.2)	150	8 (5.3)	199	12 (6.0)	0.494[++]
Stroke	49	7 (14.3)	150	20 (13.3)	199	27 (13.6)	0.866[+]
Transient ischemic attack	47	3 (6.4)	151	8 (5.3)	197	11 (5.6)	0.726[++]
Arterial hypertension[c]	49	32 (65.3)	151	66 (43.7)	200	98 (49.0)	0.009[+]
Heart failure[d]	49	4 (8.2)	151	31 (20.5)	200	35 (17.5)	0.048[+]
NYHA class I	4	1 (25.0)	31	7 (22.6)	35	8 (22.9)	0.155[++]
NYHA class II		0 (0)		14 (45.2)		14 (40.0)	
NYHA class III		3 (75.0)		8 (25.8)		11 (31.4)	
NYHA class IV		0 (0)		2 (6.5)		2 (5.7)	
Dyslipidemia[e]	49	26 (53.1)	151	46 (30.5)	200	72 (36.0)	0.004[+]
Diabetes mellitus	49	12 (24.5)	151	27 (17.9)	200	39 (19.5)	0.310[+]
$CHADS_2$ score[f]	48		150		198		0.472[+]
0		11 (22.9)		45 (30.0)		56 (28.3)	
1		16 (33.3)		53 (35.3)		69 (34.8)	
≥2		21 (43.8)		52 (34.7)		73 (36.9)	
History of							
Valvular heart disease	49	8 (16.3)	150	56 (37.3)	199	64 (32.2)	0.006[+]
Peripheral embolic events	47	2 (4.3)	149	3 (2.0)	196	5 (2.6)	0.595[++]
Arrhythmia other than AF	48	7 (14.6)	148	7 (4.7)	196	14 (7.1)	0.046[++]
Thyroid disease	48	3 (6.3)	146	9 (6.2)	194	12 (6.2)	1.000[++]
Renal disease	49	5 (10.2)	148	9 (6.1)	197	14 (7.1)	0.343[++]

[+] Chi-square test; [++] Fisher's exact test

[a] If <55 years for males or <65 years for females (mother, father, brother, sister, or children)

[b] Current: patient smoked or had smoked within previous 12 months, ≥1 cigarette/day; former: patient had stopped smoking >12 months before entry into study

[c] Blood pressure >140/90 mmHg

[d] New York Heart Association class I, II, III, or IV

[e] Low-density lipoprotein >155 mg/dl and high-density lipoprotein <40 mg/dl in men and <48 mg/dl in women

[f] 1 point for 'history of heart failure', 1 point for 'arterial hypertension', 1 point for 'age >75 years', 1 point for 'history of diabetes', 2 points for 'history of stroke' or 'history of TIA'

AF = atrial fibrillation; NYHA = New York Heart Association; PAD = peripheral arterial disease

Statins were used as a lipid lowering drugs in 92.8% of the patients.

Discussion

The baseline data of the Thai subset of the RECORD AF study, for the first time, provides the real-life scenario of AF management in Thailand. The demographic and physical characteristics of Thai patients were mostly similar to those of the global RECORD AF patients, except that the prevalence of CV risk factors and underlying CV conditions were lower, while the proportion of patients having lone AF was more in Thai patients[14]. An earlier study from China revealed that, in symptomatic AF patients, the most

Table 3. Classification and characteristics of atrial fibrillation at inclusion and cardiovascular history

Parameters	Rhythm-control Strategy (n = 49)	Rate-control Strategy (n = 151)	Total (n = 200)	p-value
Classification				0.020[++]
First diagnosis	5 (10.2)	13 (8.6)	18 (9.0)	
Diagnosis in previous year	41 (83.7)	138 (91.4)	179 (89.5)	
Unclassified	3 (6.1)	0 (0)	3 (1.5)	
Cardiovascular history and AF				
Lone atrial fibrillation	12 (24.5)	36 (23.8)	48 (24.0)	0.926[+]
MI or coronary artery disease	6 (12.2)	14 (9.3)	20 (10.0)	0.586[++]
Symptomatic atrial fibrillation[g]	32 (65.3)	105 (69.5)	137 (68.5)	0.580[+]
Left ventricular ejection fraction[h]	(n = 26)	(n = 94)	(n = 120)	0.686[++]
<30%	0 (0)	3 (3.2)	3 (2.5)	
30-35%	0 (0)	2 (2.1)	2 (1.7)	
36-40%	0 (0)	2 (2.1)	2 (1.7)	
41-50%	1 (3.8)	11 (11.7)	12 (10.0)	
>50%	25 (96.2)	76 (80.9)	101 (84.2)	

[+] Chi-square test; [++] Fisher's exact test
[g] Yes if previously symptomatic or currently symptomatic
[h] If available at ≤12 months
MI = myocardial infarction

Table 4. Characteristics of atrial fibrillation diagnosed in the previous year

Parameters	Rhythm-control Strategy (n = 41)	Rate-control Strategy (n = 138)	Total (n = 179)	p-value
AF diagnosed type				<0.001[+]
Paroxysmal AF	36 (87.8)	57 (41.3)	93 (52.0)	
Persistent AF	5 (12.2)	81 (58.7)	86 (48.0)	
Time from first diagnosis (months)	4.8±3.8 (n = 36)	4.3±3.5 (n = 114)	4.4±3.6 (n = 150)	0.500[+++]
Number of symptomatic episodes	Mean: 5.2±4.7 (n = 19) Median: 3.0 (2-6)	Mean: 10.5±25.7 (n = 74) Median: 3.0 (1-10)	Mean: 9.4±23.1 (n = 93) Median: 3.0 (1-10)	0.620[+++]
AF treatment in the month before baseline visit	(n = 21)	(n = 64)	(n = 85)	
Pharmacological conversion	11 (52.4)	3 (4.7)	14 (16.5)	<0.001[+]
Number of pharmacological conversion	1.4±0.9 (n = 11)	1.7±1.2 (n = 3)	1.4±0.9 (n = 14)	
Electrical cardioversion	1 (4.8)	0 (0)	1 (1.2)	0.247[++]
Catheter ablation	0 (0)	0 (0)	0 (0)	
Surgical therapy	0 (0)	0 (0)	0 (0)	

[+] Chi-square test; [++] Fisher's exact test; [+++] Wilcoxon test
[i] Interquartile range
AF = atrial fibrillation

frequently associated conditions were hypertension, atherosclerotic CVD, pulmonary diseases and diabetes[17]. Our results showed that arterial hypertension, dyslipidemia, diabetes and HF were the most common underlying CV disease (CVD).

AF is associated with an increased risk of stroke and other thromboembolic complications[1]. In the present study, 36.9% of patients were at high risk of thromboembolic complications as evaluated by $CHADS_2$ score of ≥2. Vitamin K antagonist was

recommended for high-risk patients by the guidelines, while low-risk patients may receive ASA[18]. However, previous Asian studies revealed the underuse of oral anticoagulant therapy[17,19]. Surprisingly the rate of antithrombotic therapy in the present study was higher than aforementioned study, as 46% of patients received antiplatelet therapy, while 43% of patients received vitamin K antagonists.

Rate-control strategy was the main treatment strategy in patients with both paroxysmal and persistent AF in the present study. Rate-control strategy was also preferred among patients with ECG evidence of AF and patients with sinus rhythm at inclusion. The preferred treatment strategies differed in Thai patients as compared to the global patients. This might be due to the difference in the socioeconomic status, beliefs, and co-morbidities profile of these two patient populations. Several randomized clinical trials demonstrated no significant difference between rhythm-control and rate-control strategies in terms of overall mortality[20-26]. However, it has been shown that in the short-term management of acute AF, rapid rhythm control promptly relieves symptoms, improves hemodynamic status, shortens hospitalization[27], and might prevent recurrent AF[28]. Rhythm control might be justified in younger patients or patients who still have symptoms despite adequate rate control[29,30]. Thus, both rhythm control and rate control are important strategies, which need to be used as according to the individual patient's situation[31].

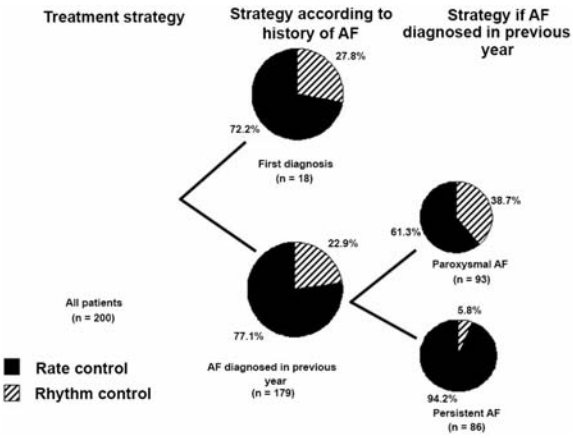
Table 5. Treatment prescribed at baseline

Parameters	Rhythm-control Strategy	Rate-control Strategy	Total	p-value
Atrial fibrillation treatment	(n = 49)	(n = 142)	(n = 191)	
Class IA	0 (0)	0 (0)	0 (0)	
Class IC	4 (8.2)	0 (0)	4 (2.1)	0.004++
Beta-blockers except sotalol	13 (26.5)	81 (57.0)	94 (49.2)	<0.001++
Class III[j] (amiodarone)	41 (83.7)	9 (6.3)	50 (26.2)	<0.001++
Heart-rate lowering calcium-channel blockers	3 (6.1)	21 (14.8)	24 (12.6)	0.138++
Cardiac glycosides	5 (10.2)	60 (42.3)	65 (34.0)	<0.001++
Anti-hypertensive drugs	30 (61.2)	93 (61.6)	123 (61.5)	0.964+
	(n = 49)	(n = 151)	(n = 200)	
Type of antihypertensive drugs	(n = 30)	(n = 93)	(n = 123)	
Diuretics	9 (30.0)	55 (59.1)	64 (52.0)	0.006++
Calcium-channel blockers	10 (33.3)	23 (24.7)	33 (26.8)	0.354++
ACE-inhibitors/angiotensin II receptor antagonists	18 (60.0)	46 (49.5)	64 (52.0)	0.401++
Vasodilators	1 (3.3)	7 (7.5)	8 (6.5)	0.678++
Other antihypertensive drugs	5 (16.7)	4 (4.3)	9 (7.3)	0.038++
Antiplatelet agents	24 (49.0)	68 (45.0)	92 (46.0)	0.630+
	(n = 49)	(n = 151)	(n = 200)	
Type of antiplatelet agents	(n = 24)	(n = 68)	(n = 92)	0.079++
Acetylsalicylic acid	19 (79.2)	61 (89.7)	80 (87.0)	
Other antiplatelet agents	2 (8.3)	6 (8.8)	8 (8.7)	
Acetylsalicylic acid + other antiplatelet agents	3 (12.5)	1 (1.5)	4 (4.3)	
Vitamin K antagonist	15 (30.6)	71 (47.0)	86 (43.0)	0.044+
	(n = 49)	(n = 151)	(n = 200)	
Lipid-lowering drugs	26 (53.1)	43 (28.5)	69 (34.5)	0.002+
	(n = 49)	(n = 151)	(n = 200)	
Type of lipid-lowering drugs	(n = 26)	(n = 43)	(n = 69)	
Statins	25 (96.2)	39 (90.7)	64 (92.8)	0.643++
Other lipid-lowering drugs	4 (15.4)	4 (9.3)	8 (11.6)	0.464++

+ Chi-square test; ++ Fisher's exact test

[j] In Thailand, only amiodarone was available

ACE = angiotensin converting enzyme



AF = atrial fibrillation

Fig. 1 Choice of treatment strategy according to history of AF at inclusion for the study patients.

Beta-blockers (except sotalol) and cardiac glycosides were mostly used among patients who received rate control strategy in the present study. For patients who received rhythm-control strategy, amiodarone was the most commonly used agent followed by beta-blockers (except sotalol). Of note, in Thailand, amiodarone is the only available class III antiarrhythmic drug.

The limitation of the study was inclusion of recently diagnosed AF patients (≤1 year from diagnosis) who were treated or not treated for AF. This excluded patients with permanent AF (>1 year). This was deliberately done in order to include more patients in whom rhythm-control strategy could still be effective, and to exclude the permanent AF patients in whom rate control is the only available option. The included patients might not represent the total population of patients having AF in Thailand, and differed from the total number of AF patients in their risk profile, prognosis and management of AF.

Conclusion

In Thailand subset data of RECORD AF study, the one-year data prior to inclusion showed that arterial hypertension and dyslipidemia were the most common underlying CVD and that around 37% of patients are at high risk of stroke. The preferred treatment was rate control, and only a quarter of the patients received rhythm control. On completion of the RECORD AF study, the one-year data after inclusion will help in assessing control of AF and in comparing the therapeutic success rate of rate-control and rhythm-control strategies in terms of clinical outcomes.

Funding source

The RECORD AF study was funded by Sanofi-Aventis.

Acknowledgement

The authors would like to acknowledge the efforts of the RECORD AF investigators of Thailand in conducting this research. The principle investigator of the RECORD AF of Thailand are listed as followed: Watthana Wongtheptien MD, Navin Suraphakdee MD, Thanita Boonyapipat MD, Niwatchai Sucharitchan MD, Apichad Sukonthasarn MD, and Orathai Pachirat MD. The authors also would like to thank Dr. (Ms.) Jai Tilak-Jain from AMRIT (Asia-Pacific Medical Writing Team), Sanofi-Aventis (India and Thailand), and Dr. Siwaporn Khumtong for assistance in preparing this manuscript.

Potential conflicts of interest

None.

References

1. Benjamin EJ, Wolf PA, D'Agostino RB, Silbershatz H, Kannel WB, Levy D. Impact of atrial fibrillation on the risk of death: the Framingham Heart Study. Circulation 1998; 98: 946-52.
2. Krahn AD, Manfreda J, Tate RB, Mathewson FA, Cuddy TE. The natural history of atrial fibrillation: incidence, risk factors, and prognosis in the Manitoba Follow-Up Study. Am J Med 1995; 98: 476-84.
3. Stewart S, Hart CL, Hole DJ, McMurray JJ. A population-based study of the long-term risks associated with atrial fibrillation: 20-year follow-up of the Renfrew/Paisley study. Am J Med 2002; 113: 359-64.
4. Jahangir A, Lee V, Friedman PA, Trusty JM, Hodge DO, Kopecky SL, et al. Long-term progression and outcomes with aging in patients with lone atrial fibrillation: a 30-year follow-up study. Circulation 2007; 115: 3050-6.
5. Go AS, Hylek EM, Phillips KA, Chang Y, Henault LE, Selby JV, et al. Prevalence of diagnosed atrial fibrillation in adults: national implications for rhythm management and stroke prevention: the AnTicoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study. JAMA 2001; 285: 2370-5.
6. Camm AJ, Kirchhof P, Lip GY, Schotten U, Savelieva I, Ernst S, et al. Guidelines for the management of atrial fibrillation: the Task Force for the Management of Atrial Fibrillation of the European

Society of Cardiology (ESC). Eur Heart J 2010; 31: 2369-429.
7. Ohsawa M, Okayama A, Sakata K, Kato K, Itai K, Onoda T, et al. Rapid increase in estimated number of persons with atrial fibrillation in Japan: an analysis from national surveys on cardiovascular diseases in 1980, 1990 and 2000. J Epidemiol 2005; 15: 194-6.
8. Yap KB, Ng TP, Ong HY. Low prevalence of atrial fibrillation in community-dwelling Chinese aged 55 years or older in Singapore: a population-based study. J Electrocardiol 2008; 41: 94-8.
9. Zhou Z, Hu D. An epidemiological study on the prevalence of atrial fibrillation in the Chinese population of mainland China. J Epidemiol 2008; 18: 209-16.
10. Jeong JH. Prevalence of and risk factors for atrial fibrillation in Korean adults older than 40 years. J Korean Med Sci 2005; 20: 26-30.
11. Ohsawa M, Okayama A, Okamura T, Itai K, Nakamura M, Tanno K, et al. Mortality risk attributable to atrial fibrillation in middle-aged and elderly people in the Japanese general population: nineteen-year follow-up in NIPPON DATA80. Circ J 2007; 71: 814-9.
12. Iguchi Y, Kimura K, Aoki J, Kobayashi K, Terasawa Y, Sakai K, et al. Prevalence of atrial fibrillation in community-dwelling Japanese aged 40 years or older in Japan: analysis of 41,436 non-employee residents in Kurashiki-city. Circ J 2008; 72: 909-13.
13. Kiatchoosakun S, Pachirat O, Chirawatkul A, Choprapawan C, Tatsanavivat P. Prevalence of cardiac arrhythmias in Thai community. J Med Assoc Thai 1999; 82: 727-33.
14. Le Heuzey JY, Breithardt G, Camm J, Crijns H, Dorian P, Kowey PR, et al. The RecordAF study: design, baseline data, and profile of patients according to chosen treatment strategy for atrial fibrillation. Am J Cardiol 2010; 105: 687-93.
15. World Medical Association declaration of Helsinki ethical principles for medical research involving human subjects. Adopted by the 18th WMA general assembly, Helsinki, Finland, June 1964, as amended by the 41st World Medical Assembly, Hong Kong, 1989.
16. International Epidemiological Association (IEA). Guidelines for Good Epidemiological Practice (GEP) proper conduct in epidemiologic research. Orem, UT: IAE European Federation; 2004.
17. Lok NS, Lau CP. Presentation and management of patients admitted with atrial fibrillation: a review of 291 cases in a regional hospital. Int J Cardiol 1995; 48: 271-8.
18. Fuster V, Ryden LE, Cannom DS, Crijns HJ, Curtis AB, Ellenbogen KA, et al. 2011 ACCF/AHA/HRS focused updates incorporated into the ACC/AHA/ESC 2006 guidelines for the management of patients with atrial fibrillation: a report of the American College of Cardiology Foundation/American Heart Association Task Force on practice guidelines. Circulation 2011; 123: e269-367.
19. Lin LJ, Cheng MH, Lee CH, Wung DC, Cheng CL, Kao Yang YH. Compliance with antithrombotic prescribing guidelines for patients with atrial fibrillation—a nationwide descriptive study in Taiwan. Clin Ther 2008; 30: 1726-36.
20. Wyse DG, Waldo AL, DiMarco JP, Domanski MJ, Rosenberg Y, Schron EB, et al. A comparison of rate control and rhythm control in patients with atrial fibrillation. N Engl J Med 2002; 347: 1825-33.
21. Van Gelder IC, Hagens VE, Bosker HA, Kingma JH, Kamp O, Kingma T, et al. A comparison of rate control and rhythm control in patients with recurrent persistent atrial fibrillation. N Engl J Med 2002; 347: 1834-40.
22. Hohnloser SH, Kuck KH, Lilienthal J. Rhythm or rate control in atrial fibrillation—Pharmacological Intervention in Atrial Fibrillation (PIAF): a randomised trial. Lancet 2000; 356: 1789-94.
23. Carlsson J, Miketic S, Windeler J, Cuneo A, Haun S, Micus S, et al. Randomized trial of rate-control versus rhythm-control in persistent atrial fibrillation: the Strategies of Treatment of Atrial Fibrillation (STAF) study. J Am Coll Cardiol 2003; 41: 1690-6.
24. Opolski G, Torbicki A, Kosior DA, Szulc M, Wozakowska-Kaplon B, Kolodziej P, et al. Rate control vs. rhythm control in patients with nonvalvular persistent atrial fibrillation: the results of the Polish How to Treat Chronic Atrial Fibrillation (HOT CAFE) Study. Chest 2004; 126: 476-86.
25. Roy D, Talajic M, Nattel S, Wyse DG, Dorian P, Lee KL, et al. Rhythm control versus rate control for atrial fibrillation and heart failure. N Engl J Med 2008; 358: 2667-77.
26. Shelton RJ, Clark AL, Goode K, Rigby AS, Houghton T, Kaye GC, et al. A randomised, controlled study of rate versus rhythm control in patients with chronic atrial fibrillation and heart failure: (CAFE-II Study). Heart 2009; 95: 924-30.
27. Lip GY, Tse HF. Management of atrial fibrillation. Lancet 2007; 370: 604-18.

28. Cosio FG, Aliot E, Botto GL, Heidbuchel H, Geller CJ, Kirchhof P, et al. Delayed rhythm control of atrial fibrillation may be a cause of failure to prevent recurrences: reasons for change to active antiarrhythmic treatment at the time of the first detected episode. Europace 2008; 10: 21-7.
29. Vora A, Karnad D, Goyal V, Naik A, Gupta A, Lokhandwala Y, et al. Control of rate versus rhythm in rheumatic atrial fibrillation: a randomized study. Indian Heart J 2004; 56: 110-6.
30. Suzuki S, Yamashita T, Otsuka T, Sagara K, Uejima T, Oikawa Y, et al. Treatment strategy and clinical outcome in Japanese patients with atrial fibrillation. Heart Vessels 2009; 24: 287-93.
31. Bajpai A, Savelieva I, Camm AJ. Treatment of atrial fibrillation. Br Med Bull 2008; 88: 75-94.

หัวใจเต้นผิดจังหวะชนิด atrial fibrillation ที่เพิ่งพบใหม่: ข้อมูลพื้นฐานผู้ป่วยไทยจากการศึกษา RECORD AF

ชาญ ศรีรัตนสถาวร, สัชชนะ พุ่มพฤกษ์, วรางคณา บุญญพิสิฏฐ์

ภูมิหลัง: *การศึกษา RECORD AF เป็นการศึกษาชนิดเฝ้าสังเกตไปข้างหน้าเป็นระยะเวลา 1 ปี เกี่ยวกับการรักษาผู้ป่วย ที่เพิ่งได้รับการวินิจฉัยว่าเป็น atrial fibrillation (AF) การศึกษานี้รวบรวมข้อมูลผู้ป่วยจากหลายประเทศทั่วโลกและแสดงให้เห็นถึงแนวทางการรักษาผู้ป่วย AF ในสถานการณ์จริง ข้อมูลที่แสดงในการศึกษานี้เป็นข้อมูลพื้นฐาน เฉพาะในกลุ่มผู้ป่วยจากประเทศไทย*

วัสดุและวิธีการ: *ผู้ป่วยที่เข้าร่วมวิจัยคือผู้ป่วยอายุตั้งแต่ 18 ปีขึ้นไป ที่มาตรวจหรือได้รับการรักษาด้วยโรคหัวใจ เต้นผิดจังหวะชนิด AF (กรณีได้รับการรักษาอยู่แล้วต้องเป็นผู้ป่วยที่ได้รับการวินิจฉัยมาน้อยกว่า 1 ปี) โดยแพทย์ผู้เชี่ยวชาญทางด้านหทัยวิทยา วัตถุประสงค์หลักคือเพื่อประเมินผลสำเร็จในการรักษาและผลการรักษาในผู้ป่วย กลุ่มที่ได้รับการรักษาแบบควบคุมจังหวะและกลุ่มที่ได้รับการรักษาแบบควบคุมอัตราการเต้น*

ผลการศึกษา: *การศึกษาดำเนินระหว่างเดือนกรกฎาคม ถึง เดือนธันวาคม ปี พ.ศ. 2550 ผู้ป่วยจำนวน 209 ราย ถูกคัดกรองเข้าร่วมการศึกษา มีผู้ป่วย 200 ราย เข้าเกณฑ์การศึกษาได้ อายุเฉลี่ยผู้ป่วย 62.8 ปี เป็นเพศชายร้อยละ 51 โรคร่วมทางหัวใจและหลอดเลือดที่พบบ่อยที่สุดคือ ความดันโลหิตสูง (ร้อยละ 49) และไขมันในเลือดผิดปกติ (ร้อยละ 36) ผู้ป่วยร้อยละ 36.9 มีความเสี่ยงที่จะเกิดลิ่มเลือดอุดตันหลอดเลือดสมอง (CHADS2 score ≥2) ในบรรดาผู้ป่วยที่ได้รับการวินิจฉัยภาวะ AF มาน้อยกว่า 1 ปี ผู้ป่วยร้อยละ 52 ได้รับการวินิจฉัยเป็น paroxysmal AF และร้อยละ 48 เป็น persistent AF กลวิธีการรักษาที่ใช้บ่อยที่สุดคือการควบคุมอัตราการเต้นซึ่งผู้ป่วยถึงร้อยละ 75.5 ได้รับการรักษาด้วยวิธีนี้ (ผู้ป่วย persistent AF ได้รับการรักษาด้วยการควบคุมอัตราการเต้นร้อยละ 94.2 ส่วน paroxysmal AF ได้รับการรักษาด้วยการควบคุมอัตราการเต้นร้อยละ 61.3 ยาที่ใช้บ่อยที่สุดในการควบคุมจังหวะคือ amiodarone สำหรับการควบคุมอัตราการเต้นคือ ยาปิดกั้นเบต้า สำหรับยาต้านการแข็งตัวของเลือด ผู้ป่วยร้อยละ 46 ได้รับการรักษาด้วยยาต้านเกล็ดเลือดและผู้ป่วยร้อยละ 43 ได้รับการรักษาด้วยยาละลายลิ่มเลือด*

สรุป: *ผู้ป่วย AF ชาวไทยซึ่งเพิ่งได้รับการวินิจฉัยมีโรคร่วมที่สำคัญคือความดันโลหิตสูงและระดับไขมันผิดปกติในเลือด กลวิธีการรักษาที่ใช้บ่อยที่สุดคือการควบคุมอัตราการเต้น*